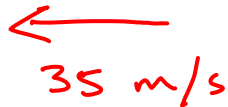


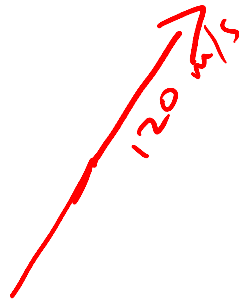
Example 5.

A plane is capable of 120 m/s in still air. Where must the pilot head the plane in order to end up going due north when there is a 35 m/s west wind?

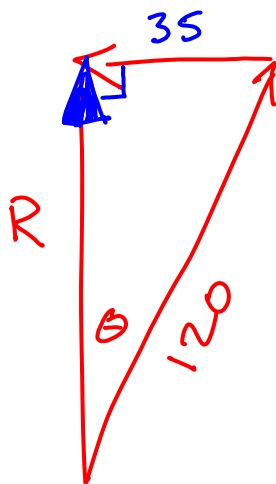
wind velocity



→ plane must point northeast, into the wind



→ vector-add wind velocity + plane engine velocity so that resultant velocity is directed due north:



$$\theta = \sin^{-1} \left[\frac{35}{120} \right]$$

$$\boxed{\theta = 17^\circ \text{ E of N}}$$